DOCUMENT RESUME

ED 449 972 SE 064 365

TITLE	E-Hazards: They're Out There....
INSTITUTION	Environmental Protection Agency, Washington, DC.
REPORT NO	EPA-906-K-99-003
PUB DATE	1999-10-00
NOTE	20p.; Produced by the U.S. EPA, Region 6. Companion to the videotape "E-Hazards: They're Out There..." (15 minutes), designed for second to fifth graders.
PUB TYPE	Guides - Non-Classroom (055)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	Air Pollution; Asbestos; *Children; *Hazardous Materials; Health Education; Pesticides; Safety; Science Education; Smoking
IDENTIFIERS	*Environmental Health; Household Products; Lead (Metal); Radon; Ultraviolet Light

ABSTRACT

This booklet discusses concerns about environmental health threats to children, describes dangers, and lists strategies for protection. Topics include: (1) "Household Products"; (2) "Secondhand Tobacco Smoke"; (3) "Pesticides"; (4) "Overexposure to Ultraviolet Light"; (5) "Lead"; (6) "Contaminated Water"; (7) "Ozone Air Pollution"; (8) "Radon"; and (9) "Asbestos." (YDS)

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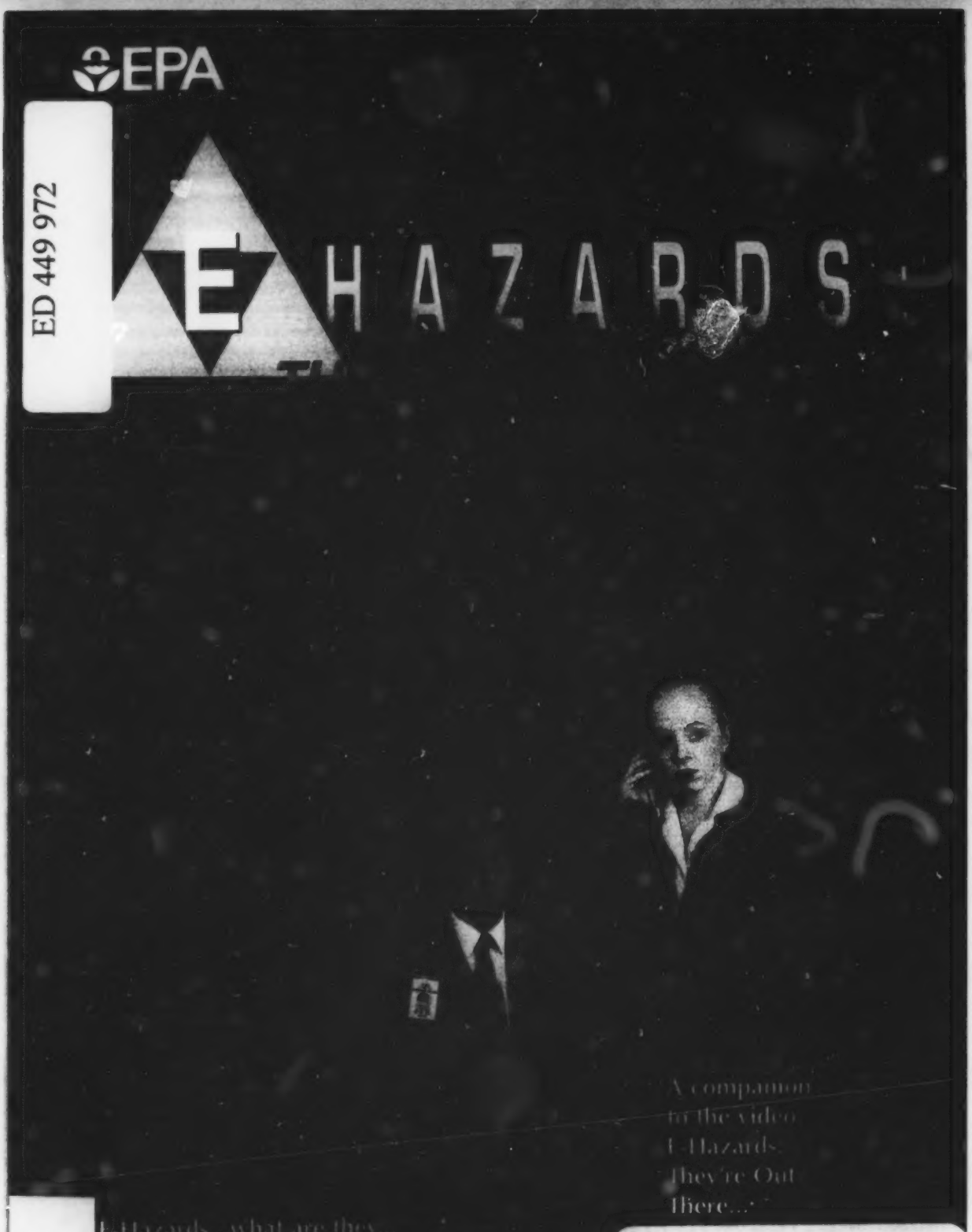
E HAZARDS



A companion to the video E-Hazards: They're Out There...

E-Hazards...what are they... and what can we do about them?

This booklet will help you identify everyday environmental health threats to children and provide useful tips and cautions.

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A Message to Parents and Teachers:

The Environmental Protection Agency (EPA) has made children's health issues a priority in our agency's work. We recognize children face complex environmental threats from a range of hazards commonly found in our homes, communities, and everyday surroundings. We all play an important part in ensuring that children receive the education, awareness, and protection they deserve. Together, we can reduce their risk.

Thank you in advance for sharing this information with your children.

E Hazards: They're Out There...
The United States Environmental Protection Agency, Region 6

EPA906-K-99-003

HAZARDS: THEY'RE OUT THERE . . .

Why do we need to be concerned about environmental health threats to children?

Children are particularly vulnerable to environmental health risks because:

- **Children are more susceptible to environmental threats.** Children's systems are still developing - including rapid changes in growth and development, immature body organs and tissues, and weaker immune systems in infancy.

- **Children are at greater risk from environmental threats.** Pound-for-pound, children breathe more air, drink more water, and eat more food than adults. They also play outside more; therefore, they are more exposed to whatever toxins are present.

- **Children are exposed to different environmental hazards.** Children are least able to protect themselves since they may not recognize an environmental health threat when they see one. Additionally, their natural curiosity and tendency to explore leaves them open to health risks adults can easily avoid.

- **Children are most at risk because they have fewer experiences in life than adults.** Their limited reasoning abilities and knowledge may cause them to make poor decisions that expose them to risk.

Household Products

What are some of the products I should particularly notice?
Be sure to read the warning labels on containers of solvents, paint, paint strippers, wood preservatives, aerosol sprays, moth repellants, air fresheners, stored fuels, automotive products, hobby supplies, pesticides, cleaners and disinfectants... to name a few.

How can household products affect children's health?
Short-term effects include eye, nose, and throat irritation; nausea, and headaches.
Long-term exposure can damage to the liver, the kidneys, and the central nervous system.

What can I do to protect my family?

- Recognize and be aware of any warning labels.
- Exercise caution when using these products. Don't allow young children to use them.
- Use these products only for their intended purpose and according to manufacturer's instructions.
- Use in well-ventilated areas.
- Keep in original container.
- Choose products packaged to reduce spills, leaks and child tampering.
- Clean up household product spills immediately.
- Attend a local recycle campaign and properly dispose of all dangerous products.

Are there ways I can reduce my need for the products?

- Quickly attend to spills and stains so that you may not need strong products.
- Control excess moisture (such as standing water from air-conditioner drains or refrigerator drip pans) and fix leaks, drips and seepage problems. By controlling the source, you do not need to clean up a problem.
- Consider using "natural" or "alternative" products, such as vinegar or baking soda.

Products which may be labeled "environmentally safe" may still be a health hazard. Any product that evaporates into the air has the potential to be an indoor air pollutant, depending on the quantity used, the method of use, the product's toxicity, and the sensitivity of the user.

Secondhand Tobacco Smoke

What is secondhand smoke?

Secondhand smoke, or Environmental Tobacco Smoke (ETS) is a mixture of the smoke given off by the burning end of a cigarette, pipe, or cigar, and the smoke exhaled from the lungs of smokers. This mixture contains more than 4,000 substances, at least 40 of which cause cancer in people and animals. Exposure to secondhand smoke is also called **involuntary smoking**, or **passive smoking**.

Secondhand smoke is a serious health risk to children.

Children exposed to secondhand smoke are more likely to have:

- Reduced lung function;

- Symptoms of respiratory irritation like cough, excess phlegm, and wheezing.
- A buildup of fluid in the middle ear (the most common cause of children's operations);
- The potential to develop asthma.

Asthmatic children are especially at risk. EPA estimates that exposure to secondhand smoke increases the number of episodes and severity of symptoms in hundreds of thousands of asthmatic children. Asthma cases are rising steadily.

What can I do to reduce my family's risk from secondhand smoke?

- Do not smoke in your house or permit others to do so.
- If someone insists on smoking indoors or in the car, increase ventilation in the area where the smoking takes place - open windows or use exhaust fans.
- Do not smoke if children are present, particularly infants and toddlers. They are especially susceptible to the effects of passive smoking.
- Ensure that child care centers are smoke-free.

Pesticides

Whether it's ants in the kitchen or weeds in the vegetable garden, pests can be annoying and bothersome. At the same time, the pesticides we use to control them can also cause problems. Human health concerns arise through direct exposure to the pesticides as well as exposure via residues on food.

How can pesticides affect children's health?

Immediate effects may include nausea, vomiting, seizures, and shortness of breath.

Long-term effects may include neurological and reproductive disorders, birth defects, asthma, and cancer.

What can I do to protect my family?

Using a number of simple strategies, we can have beautiful lawns and gardens, and relatively pest-free homes without endangering our children.

Outdoors

- "Get down & dirty." Weed by hand.
- Attract beneficial insects (praying mantises and lady bugs will eat the bugs that eat your plants).
- When all else fails, use the least toxic chemical controls.
- If you use pesticides, follow the label directions.
- To help reduce pesticides in foods, wash or scrub produce under running water, peel off the skin or outer leaves, and use organic fruits and vegetables.

For information on proper management of your lawn and garden, contact a certified nursery, horticulture association or county extension agent.

Indoors

- Avoid attracting pests. (They are attracted to food, water, and places to hide.)
- Use bait type pesticide if you can.
- Think Safety: Apply in a well-ventilated area and at a time when children are not around (i.e. at night on weekends, etc.), and keep kids away from treated areas.

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Cockroaches

- Keep food in airtight containers.
- Plug cracks around baseboards, walls, and pipes.
- Repair leaky pipes and faucets.
- Avoid leaving standing water in your house and cover bars of soap; roaches are attracted to both.

Ants

- Use pastes, baits, or traps with bait.

Flies

- Keep screens over windows. If no screens are available, close your windows before it gets sunny.

Fleas

- Wash your pets with soap and comb them regularly with a flea comb.
- Vacuum your house and wash your pet's bedding every two weeks before the eggs have time to hatch.

There are alternatives to pesticides. For example, squeeze lemon juice at the place of entry to keep ants away, swat flies with a flyswatter instead of using a spray to kill flies, and diatomaceous earth is an effective non-pesticide deterrent for some pests.

Be sure to store pesticides safely, out of children's reach.

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Overexposure To Ultraviolet Light

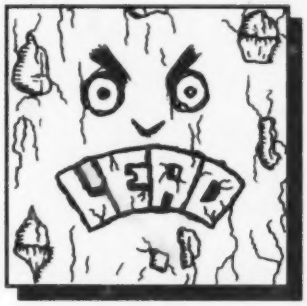
Overexposure to the sun's ultraviolet (UV) rays seriously threatens human health. Besides the immediate and dangerous sunburn, continued, long-term exposure to UV radiation can cause skin cancer, eye damage (including cataracts), immune system suppression, and premature aging of skin.

Who is susceptible to harmful UV radiation? Everyone, whether you are light or dark skinned.

What can I do to protect my family?

- Pay attention to the UV Index daily. Plan indoor activities for children on high UV days.
- Educate yourself on stratospheric ozone, ozone depletion, and UV radiation.
- Wear sun-screen (highest SPF factor).
- Wear protective clothing (hats with brims, sunglasses, long pants, and long sleeve shirts) if you have to be out.
- Try to stay in shaded or covered areas.
- Teach children sun safety.
- Keep out of the sun when UV rays are most harmful (10:00 am - 4:00 pm).

Children are highly susceptible to harmful UV radiation, since 80% of lifetime sun exposure occurs before the age of 18. Just one or two blistering sunburns in childhood may double the risk of developing melanoma, the most serious form of skin cancer. Even repeated, gradual suntanning increases the risk of developing other forms of skin cancer.



Lead

Approximately 900,000 children in the United States between the ages of one and five have high levels of lead in their blood. Exposure to lead can be through air, food, drinking water, and contaminated soil and dust. Most homes built before 1960 contain heavily leaded paint. Most well or city water does not contain lead, but water can pick up lead *inside your home* from household plumbing that is made with lead materials. Children can swallow lead or breathe lead contaminated dust if they play in dust or dirt and put their fingers in their mouths. Because it does not break down naturally, lead can remain a problem until it is removed.

How does lead affect children's health?

The **long-term** effects can be severe: learning disabilities, decreased growth, hyperactivity, impaired hearing, and even brain damage. If caught early, these effects can be limited by reducing exposure to lead or by medical treatment. The good news is that there are simple things you can do to help protect your family.

What can I do to protect my family?

- **Get kids tested** for blood levels. (See your local health department for free testing).
- **Keep toys and play surfaces clean.** Ordinary dust and dirt may contain lead.
- **Reduce the risk from lead paint -** Make sure your child does not chew on anything covered with lead paint, such as painted window sills, cribs, or playpens. Keep painted surfaces, particularly in older homes, in good shape.

- **Don't remove lead paint yourself.** (These activities generate large amounts of lead dust.) Ask your local state health department for state certified contractors. Hire a person with special training for correcting lead paint problems.

The Centers for Disease Control recommends that children be tested for the first time when they are a year old, or at six months if you think your home has lead in it, if you live in an older building, or if you live near a metal smelter. Ask your doctor or local health office.

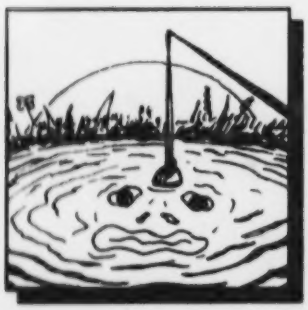
- **Don't bring lead dust into your home.**
  - If you work with lead in your job or as a hobby, change clothes before you go home and remove your shoes before you go in. You should wash your clothes separately from your children's clothes - and run a cycle to rinse out the washing machine.
  - Encourage your children to play in sand or grassy areas instead of dirt, which sticks to fingers and toys, especially around older buildings. Keep children from eating dirt, and make sure they wash their hands when they come inside and before eating.
- **Get lead out of drinking water.** Boiling water will not reduce the amount of lead. Bathing is not a problem because lead does not enter the body through skin absorption (just don't drink the bath water!).
  - Contact your local health department or your water supplier to see how to get your tap water tested.
  - If your water contains lead:
    - Use cold water to cook, not hot water.
    - Run the cold water for 30-60 seconds before drinking or using it for cooking.
    - Use bottled water to make baby formula.
    - If you have concerns about lead contamination, consider buying a certified filter for lead removal.

- **Prevent lead from entering foods:**
  - Don't store food or liquids in lead crystal glassware.
  - If you reuse plastic bags to store or carry food, keep the printing side out.
  - Do not store food in opened metal cans.

- Don't cook or store food in glazed pottery unless you know for certain that they are lead free.

- **Eat right**. A child who gets enough iron and calcium will absorb less lead. Foods rich in iron include eggs, lean red meat, and beans. Dairy products are high in calcium and so are some fruits like figs and oranges.

To protect families from exposure to lead from paint, dust, and soils, Congress passed the Residential Lead Based Paint Hazard Reduction Act of 1992. Sellers and landlords must disclose known lead-based paint and lead-based paint hazards before the sale or lease of most housing built before 1978.



Contaminated Water

Drinking water in the United States is safe for most healthy adults and children; contamination of drinking water is rare. However, outbreaks of waterborne illnesses, such as

those caused by *Cryptosporidium*, may occur. EPA is currently developing more stringent standards to further reduce the low rate of waterborne disease.

Swimmers may contact disease-causing organisms in sewage-contaminated surface water, which may cause hepatitis, dysentery, and gastrointestinal illnesses, as well as fever and ear infections. Bodies of water (lakes, ponds or streams) and their sediments also may be contaminated with toxic substances, such as PCBs and heavy metals.

Fish Consumption If pregnant women and children eat fish from contaminated waters, the contaminants may cause serious health effects, such as cancer, birth defects, and nervous system damage.

What can I do to protect my family?

Drinking Water

Clear water doesn't mean clean water. Clear water can have enough chemical or biological contaminants to make people very sick, or even cause death.

- Only drink water from the tap - don't drink water from streams, lakes, standing puddles, or a garden hose.
- Ask your local community water system if there are any harmful contaminants found in your drinking water.
- Follow health and safety advisories.

Swimming

Swim in properly maintained pools when possible. Exposure to health threats can come from both contact with contaminated water, and from ingestion of it. If you are not sure about the water quality:

- Hold your nose or use plugs when jumping into the water.
- Wash open cuts and scrapes with clean water and soap after swimming.
- Avoid swallowing water when swimming.

- Use ear plugs, swimming goggles or masks if you tend to get ear or eye infections.
- Observe beach & lake closures and never swim in stagnant or polluted areas or where water temperature is high.

Fish Consumption

Don't eat fish from areas with posted warnings, or from water that looks or smells as if it may be polluted. Water bodies may be contaminated by spills that authorities don't know about. Any suspicious water conditions (looks or smells bad) should be reported to local or state health authorities at once.

How do I find out if I can swim in, or eat the fish from, my river or lake? Contact your state health agency.

Ozone Air Polution

High levels of ground-level ozone air pollution appear to cause approximately 50,000 emergency room visits a year and 15,000 hospitalizations for respiratory problems. The American Lung Association reports that children and people with asthma and other respiratory conditions are at elevated risk for acute and chronic health problems from ozone.

How can ground level ozone affect children's health?

Ozone levels above the national health-based standards can cause chest pain, watery eyes, shortness of breath, and can aggravate lung/respiratory conditions such as asthma. Children are more sensitive to even low levels of ozone and particulates than adults and are more likely to get sick.

What can I do to protect my family?

- Be informed and pay attention to the ozone alerts.
- Limit outside activities during peak ozone hours.
- Be aware of children's sensitivities (asthma, chronic lung disease) and seek treatment. Alert coaches, teachers, child care providers, and camp counselors of their higher risk.

How can I improve the air quality?

Help limit ozone pollution formation:

- Cut gasoline emissions by sharing rides to school, using public transportation, bicycling, skating or walking.
- Recycle paper, metal, glass and plastic.
- Don't use gas-powered lawn equipment in the morning or mid-day hours on ozone alert days.
- Refuel vehicles in the evening on ozone alert days and don't top-off the tank. Avoid unnecessary idling and keep the car well-tuned and the tires properly inflated.

There are two types of ozone. One occurs naturally, high in the atmosphere and protects us from harmful solar radiation. The other occurs near the ground, forming when sunlight reacts with pollutants emitted by cars, trucks, industrial processes, etc. The ground level ozone can be harmful to human health.

Radon

What is Radon? How can it enter my home?

Radon is an odorless, colorless radioactive gas that is present in most of the soil and rock around the world.

Because radon is a gas, it can move up through the ground and seep into your home through cracks in the foundation and openings around sump pumps, pipes, and drains. Sometimes radon enters the home through well water. Your home traps radon inside, where it can build up.

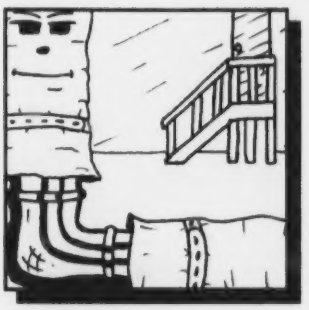
How does radon affect children's health?

Radon gas decays into radioactive particles that can get trapped in their lungs. These radioactive particles can damage tissue and lead to lung cancer. Smoking combined with radon exposure is an even greater health risk.

What can I do if my home has unhealthy levels of radon?

- Seal cracks and other openings in the basement or ground floor.
- Eliminate smoking from your home.
- Aerate or filter well water through granular activated charcoal.
- Get professional advice on planning radon reduction measures.
- Use a qualified contractor to draw up and implement a radon mitigation plan, if this becomes necessary.
- If you are having a new home built in an area with high levels of radon, incorporate radon-resistant features into the construction.

How do I know if there is radon buildup in my home?
The only way to know is to have your home tested. If your water comes from a well, have it tested also. There are many do-it-yourself kits you can buy at retail stores or through the mail (just make sure they meet EPA's qualifications for radon measurements). Contact EPA's radon hotline, your local Extension Office, or your state's health department for more information.



Asbestos

What is asbestos?

Asbestos is a mineral that, when mined and processed, takes the form of very small fibers which are usually invisible to the naked eye. It was mostly used in schools as insulation and in other building materials. It was also used in floor and ceiling tile, cement pipe, corrugated paper-pipe wrap, acoustic ceiling tile, decorative insulation, and spray-applied fireproofing.

Asbestos became a popular commercial product because it was strong, wouldn't burn, resisted corrosion, and insulated well. The peak years of asbestos use were from WWII until the 1980's, when many manufacturers voluntarily got out of the asbestos business because of growing concerns about health effects. Asbestos remains legal to use today in over 3,000 different products.

When is asbestos a problem?

Intact and undisturbed, asbestos materials generally do not pose a health risk. Asbestos materials, however, can become hazardous when, due to damage or deterioration over time, they release fibers. If the fibers are inhaled, they can lead to health problems.

How can asbestos affect children's health?

It can disrupt the normal functioning of the lungs. Three specific diseases - asbestosis, lung cancer, and another cancer known as mesothelioma - have been linked to asbestos fibers, but it may be 20 years or more before symptoms appear.

How can I protect my family?

- **Ask** for professional advice when seeking out information on identification and remedying asbestos problems.
- **Do not disturb** asbestos-containing materials. Leave undamaged materials alone and try to prevent them from being disturbed, damaged, or touched. Frequently inspect materials for damage and signs of deterioration.
- **Hire** a trained professional when removing asbestos.
- **Learn** about your school's or child care center's asbestos activities. Find out if they have identified asbestos-containing materials and if they have prepared an asbestos management plan. Encourage them to carry out the management plan.

EPA

Children's Health Hotline	[illegible]
Safe Drinking Water Hotline	(800) 426-4791
Indoor Air Quality Hotline	(800) 438-4318
Radon Hotline	(800) 767-7236
Asbestos Hotline	(800) 368-5888
Pesticides Hotline	(800) [illegible]
Lead Hotline	(800) [illegible]
Water Hotline	(202) 260-[illegible]

All information in this booklet may be found at

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